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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/343,684	06/30/1999	ALICIA BORYSOWICZ	1029/182	8228

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EXAMINER	
VINCENT, SEAN E	
ART UNIT	PAPER NUMBER
1731	

DATE MAILED: 12/29/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	09/343,684	BORYSOWICZ ET AL.	
	Examiner	Art Unit	
	Sean E Vincent	1731	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *03 June 2003* .

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *10,12,13 and 15-18* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *10,12,13 and 15-18* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

11)☒ The proposed drawing correction filed on *29 August 2001* is: a)☒ approved b)☐ disapproved by the Examiner.

If approved, corrected drawings are required in reply to this Office action.

12)☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

13)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☒ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____ .

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

14)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).

a) ☐ The translation of the foreign language provisional application has been received.

15)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____ .
4) ☐ Interview Summary (PTO-413) Paper No(s). _ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: .

Continued Examination Under 37 CFR 1.114

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on June 3, 2003 has been entered.

Claim Rejections - 35 USC § 103

2. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

3. Claims 10, 12, 13 and 16-18 are rejected under 35 U.S.C. 103(a) as being unpatentable over Aoki (US 5272621) in view of Haissig et al (US 5822740) and Victor et al (IEEE article).

4. Aoki teaches systems for controlling the melting of a glass batch in a glass melting furnace using fuzzy logic with fuzzy prediction. (see the figures, col. 4, line 22 to col. 7, line 55, col. 12, line 3 to col. 13, line 41). It is the position of the examiner that the claimed 'learning device' reads on the means for evaluating operator input disclosed by Aoki. In col. 13, lines 13-22, glass pull and state information is described as being 'known input information' in addition to temperature inputs. Aoki was cognizant of multiple inputs "such as measurable disturbances (e.g. nature and state of raw material, temperature, etc.) as well as the manipulated inputs."

5. The term "sensors for detecting different types of operating conditions in a furnace" is taken by the examiner to be a means-plus-function limitation defined by the applicant's

specification at page 7, line 24 to page 8, line 5 to include position sensors, end-of-travel sensors, flow-rate sensors, pressure sensors and temperature sensors and known equivalents in the art. Haissig et al, provided as a teaching reference, discloses fuzzy control systems used for furnace control, water heater control and other purposes and clearly shows different types of sensors known in the heating control arts including flow and pressure sensors (see abstract, fig. 1e, claim 9 and col. 9, lines 46-60). It is the position of the examiner that this broad means-plus-function limitation reads on Aoki's general disclosure of detecting measurable disturbances. While disturbance measuring sensors other than temperature sensors are not named in Aoki et al, the suggestion evident from Aoki's disclosure is that known disturbances affecting the system should be measured with the appropriate sensors. Other appropriate sensors known in the art can be found in Haissig et al.

6. The term "plurality of furnace actuators" is taken by the examiner to mean the actuators the positions of which were sensed by the above sensors. Likewise, "different types of furnace operations" is taken to mean operations directly related to the above sensing means. It is the position of the examiner that the combined teachings of Aoki and Haissig et al would have suggested a predictive network for a plurality of actuators and learning different types of furnace operations.

7. Aoki does not teach the inclusion of a video camera or image processing means. Victor et al teaches a computer vision system for acquiring and processing images of flames, combustion chamber walls and nonfused materials in the melting tank of a glass furnace (see entire article). Victor et al also teaches Baysian and neural network classification means, means for controlling furnace bubblers, and learning means as well as using flame classification data in

a feedback controller to operate the furnace. It would have been obvious to a person of ordinary skill in the art at the time the invention was made to incorporate the image acquisition and processing system, the classification and learning means and the flame and bubbler control means of Victor et al into the apparatus of Aoki because Victor et al teaches that it would result in a fast control system implementation.

8. Claim 15 is rejected under 35 U.S.C. 103(a) as being unpatentable over Aoki, Haissig et al and Victor et al as applied to claim 12 above and further in view of Miller (US 4409012).

9. Aoki does not teach the inclusion of a video camera or image processing means. Victor et al does not teach image analysis of a plurality of batch parameters, only for "the presence on nonfused materials". Miller teaches a glass furnace in which a video camera is positioned to view the surface of the batch and melt mixture wherein the video signal is digitized and processed for monitoring the operation of the furnace bubblers (see figures; abstract; col. 1, lines 39-50; col. 2, lines 30-39 and lines 60-65; col. 3, lines 51-68; col. 4, lines 1-46; col. 5, lines 1-12; col. 7, lines 24-65). It would have been obvious to a person of ordinary skill in the art at the time the invention was made to use the batch monitoring system of Miller within the apparatus of Aoki and Victor et al because Miller teaches that it was a more efficient monitoring means.

Response to Arguments

10. Applicant's arguments filed June 3, 2003 have been fully considered but they are not persuasive.

11. In response to applicant's argument that the cited art does not reasonably teach the claimed "method steps", a recitation of the intended use of the claimed invention must result in a

structural difference between the claimed invention and the prior art in order to patentably distinguish the claimed invention from the prior art. If the prior art structure is capable of performing the intended use, then it meets the claim. In a claim drawn to a process of making, the intended use must result in a manipulative difference as compared to the prior art. See *In re Casey*, 152 USPQ 235 (CCPA 1967) and *In re Otto*, 136 USPQ 458, 459 (CCPA 1963). Note that the rejected claims are all directed to a *system*, not a method.

12. In response to applicant's argument that the references fail to show certain features of applicant's invention, it is noted that the features upon which applicant relies (i.e., specific sensors, actuators or furnace operations) are not recited in the rejected claim(s). Although the claims are interpreted in light of the specification, limitations from the specification are not read into the claims. See *In re Van Geuns*, 988 F.2d 1181, 26 USPQ2d 1057 (Fed. Cir. 1993). To date, no mention of sensors, actuators or operations specific to glass melting furnaces or systems for controlling glass melting furnaces has appeared in an independent claim.

13. In response to applicant's arguments, the recitation "glass batch in a glass melting furnace" has not been given patentable weight because the recitation occurs in the preamble. A preamble is generally not accorded any patentable weight where it merely recites the purpose of a process or the intended use of a structure, and where the body of the claim does not depend on the preamble for completeness but, instead, the process steps or structural limitations are able to stand alone. See *In re Hirao*, 535 F.2d 67, 190 USPQ 15 (CCPA 1976) and *Kropa v. Robie*, 187 F.2d 150, 152, 88 USPQ 478, 481 (CCPA 1951).

14. In response to applicant's argument that there is no suggestion to combine the references, the examiner recognizes that obviousness can only be established by combining or modifying the

teachings of the prior art to produce the claimed invention where there is some teaching, suggestion, or motivation to do so found either in the references themselves or in the knowledge generally available to one of ordinary skill in the art. See *In re Fine*, 837 F.2d 1071, 5 USPQ2d 1596 (Fed. Cir. 1988)and *In re Jones*, 958 F.2d 347, 21 USPQ2d 1941 (Fed. Cir. 1992). In this case, the rejected claims are generic *system* claims wherein glass melting furnace is mentioned only in the preamble. Applicant's arguments appear to state that the combination of Aoki and Haissig et al would not have been obvious because neither reference teaches the claimed method steps. As stated above, the claims are *system* claims, not method claims. Further, the teachings of Haissig et al would have been relevant to furnace control systems at least.

15. The applicant appears to stress the duplication of sensor means and actuator means as a reason for allowability of the claims. Considering the broad language of the claims, the addition of multiple "different" sensors or actuators doesn't increase the complexity of the claimed system. The claims read as though the system elements include "lots of different parts" to do "lots of different things." As such, they should read on prior art that clearly shows a part doing something well with a suggestion to include further parts. For this reason, it is the position of the examiner that the system elements taught by Aoki, Haissig et al and Victor et al can be combined to make the claimed system obvious.

Conclusion

16. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Sean E Vincent whose telephone number is 571-272-1194. The examiner can normally be reached on M - F (8:30 - 6:00).

17. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Steven P. Griffin can be reached on 571-272-1189. The fax phone number for the organization where this application or proceeding is assigned is (703) 872-9306.

18. Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-308-0651.

Sean E Vincent
Primary Examiner
Art Unit 1731

S Vincent